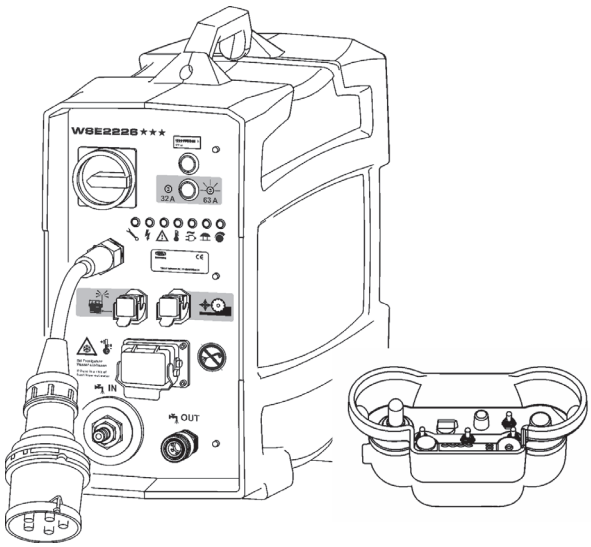
Operating Instructions

Control unit WSE2226★★★ USA

Index 000



Original operating instructions
10993031 en USA / 13.08.2015

Congratulations!

With a Hydrostress unit from TYROLIT, you have chosen a tried and tested piece of equipment which has been designed and built to leading technical standards. Only genuine TYROLIT Hydrostress replacement parts can guarantee quality and interchangeability. If maintenance work is neglected or carried out inexpertly we will be unable to honour our warranty obligations. Any repair work must be carried out by trained personnel only.
Our after sales service is available to help ensure that your TYROLIT Hydrostress units remain in perfect working order.
We hope that working with your TYROLIT unit will be a satisfying and fault-free experience.

TYROLIT Hydrostress

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1 Safety

DANGER
Failure to comply with the safety instructions in the «Safety Manuals / System Manuals» may result in serious injuries or even death.
▶ Make sure that the «Safety Manuals / System Descriptions» for the relevant type of saw have been fully read and understood.

DANGER
Death or serious injury can be caused by sudden start-up of the machine.
▶ Before switching on the system, ensure that no other persons are present in the danger areas.
▶ Switch the system off before connecting or disconnecting cables.
▶ On leaving the system switch off and make safe so that it cannot be switched on again.

Death or serious injury as a result of the sawing machine continuing to run after an accident.
▶ Ensure that the EMERGENCY STOP button can be reached quickly.

Electric shock from live cables and connectors.
▶ Switch off the control unit WSE2226★★★ before connecting or disconnecting cables.
▶ Ensure that the power supply is earthed and fitted with a residual current operated protective device (FI Type B) with a maximum residual current of 30mA.

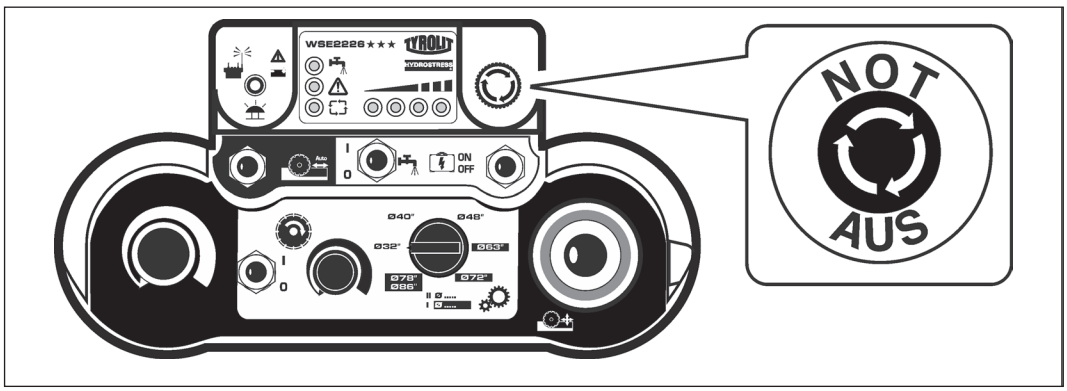
Risk of fire due to incorrect mains voltage.
▶ Make sure that the mains voltage and mains frequency correspond with the mains settings of control unit WSE2226★★★.

1.1 Action in an emergency

▶ Press the EMERGENCY STOP button on the remote controller.

If the EMERGENCY STOP has been activated on the radio remote controller, the LED pilot lamp flashes quickly.

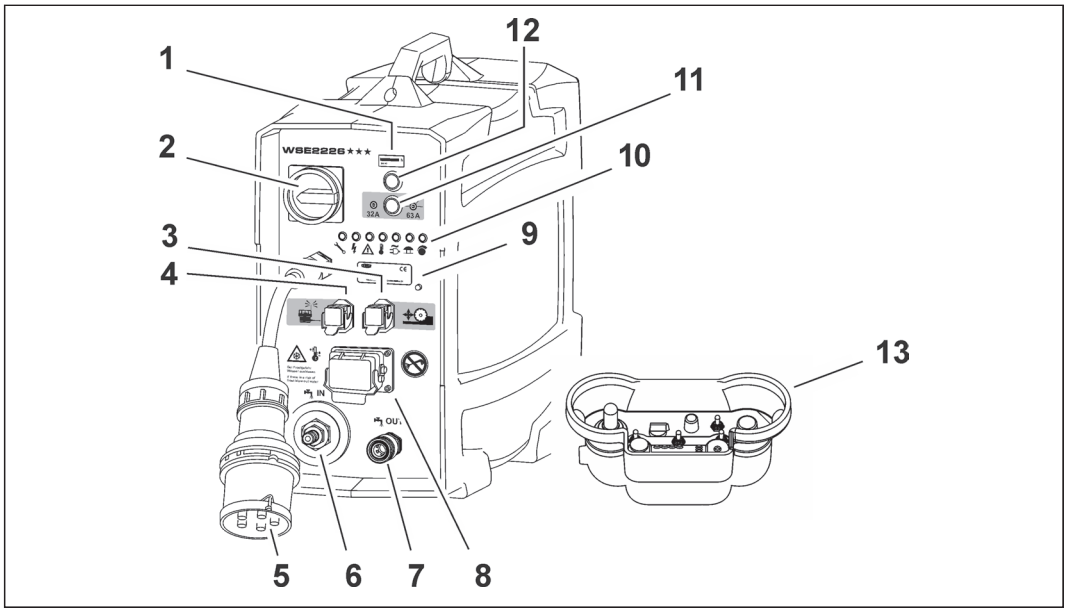
In an emergency the sawing machine can be also switched off using the main switch of control unit WSE2226★★★.



Emergency Stop

2 Description

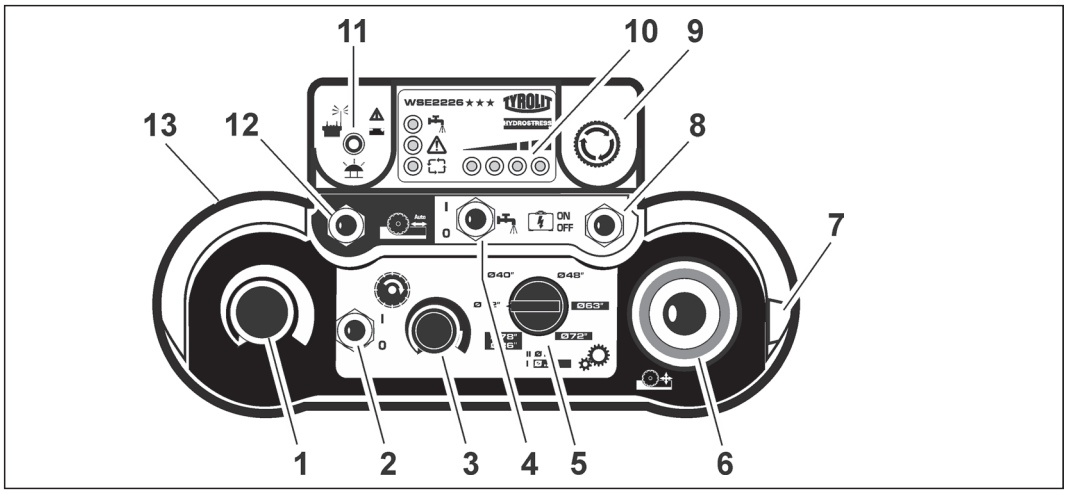
2.1 Main components Control unit



Main components Control unit

1 Operating hours counter
2 Main switch
3 Feed motor connection
4 Remote controller connection
5 Mains connector
6 Water nipple / water inlet
7 Water connection / water outlet
8 Main motor connection
9 Name plate
10 Indicator lights
11 Mains system selection button
12 Reset button
13 Radio remote controller

2.2 Main components of radio remote controller



Main components of remote controller

1 Feed potentiometer
2 On / Off Main motor
3 Main motor potentiometer
4 Water On / Off
5 Diameter selector switch
6 Traverse feed joystick
7 Starter switch
8 Pulse switch Control unit
9 EMERGENCY STOP
10 Indicator lights
11 Warning light (radio & battery)
12 Position lock switch (Traverse feed)
13 Casing

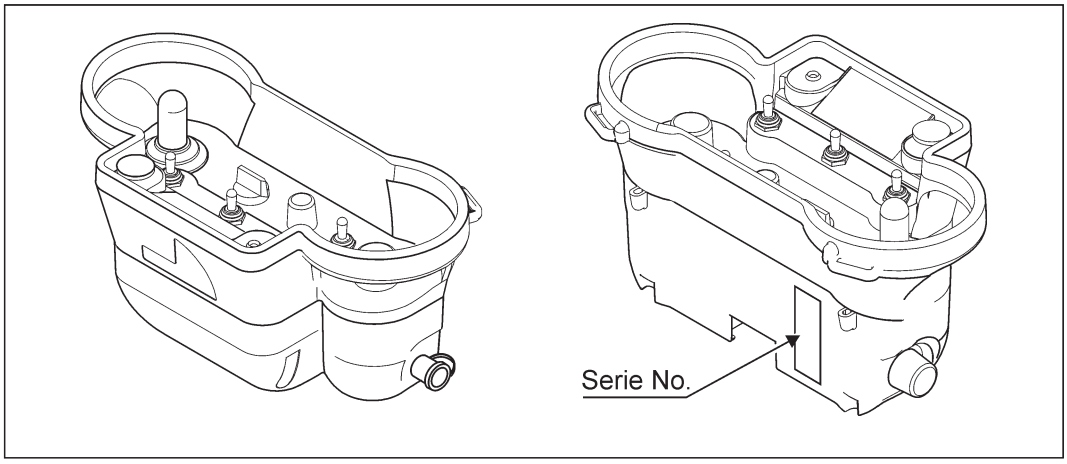
2.3 Remote controller

The remote controller can be replaced by an accumulator or a battery operated radio remote controller. The remote controller can also be operated using a cable.

Radio remote controller

The transmitter and receiver are a pair of matched units. They cannot be used with other devices.

Transmitter = radio remote controller
Receiver = control unit



Remote controller

2.4 Operating modes

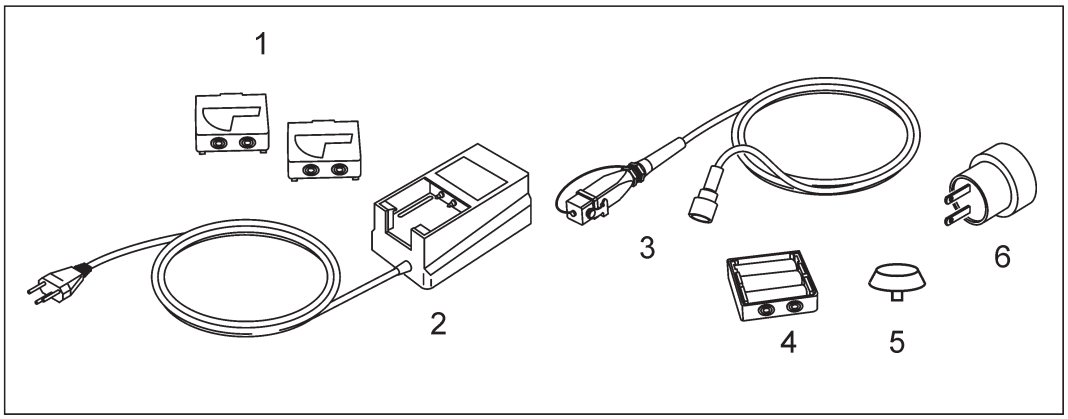
Rechargeable battery operation:
The interchangeable rechargeable battery is inserted in the base of the casing. The operating period with a fully charged battery is approximately 12 hours. A shorter operating period can be expected at low temperatures. The reception distance is 27 yards.

Battery operation:
The battery holder is included in the scope of supply and allows operation with three 1.5 V AA batteries. The reception distance is 27 yards.

Cable operation:
The cable insert is included in the scope of supply and allows connection of the remote controller to the control unit WSE2226★★★. The cable length is 11 yards. Cable operation makes it possible to work in areas where radio operation is not allowed (e.g. hospitals).
With cable operation all control signals are transmitted via the power cable.
The rechargeable/ordinary battery holders may not be inserted in the base of the casing during cable operation.

2.5 Accessories for remote controller

The battery charger is exclusively for recharging the interchangeable rechargeable battery. The battery holder must not be inserted.



Accessories

1	2x Interchangeable rechargeable batteries	No. 10984306
2	Rechargeable battery charger	No. 10984305
	Rechargeable battery charger with 10-30 VDC connection	No. 10984840
3	Remote control cable	No. 10991362
4	Battery holder	No. 10984307
5	Key	No. 10984309
6	Adapter	No. 10993019

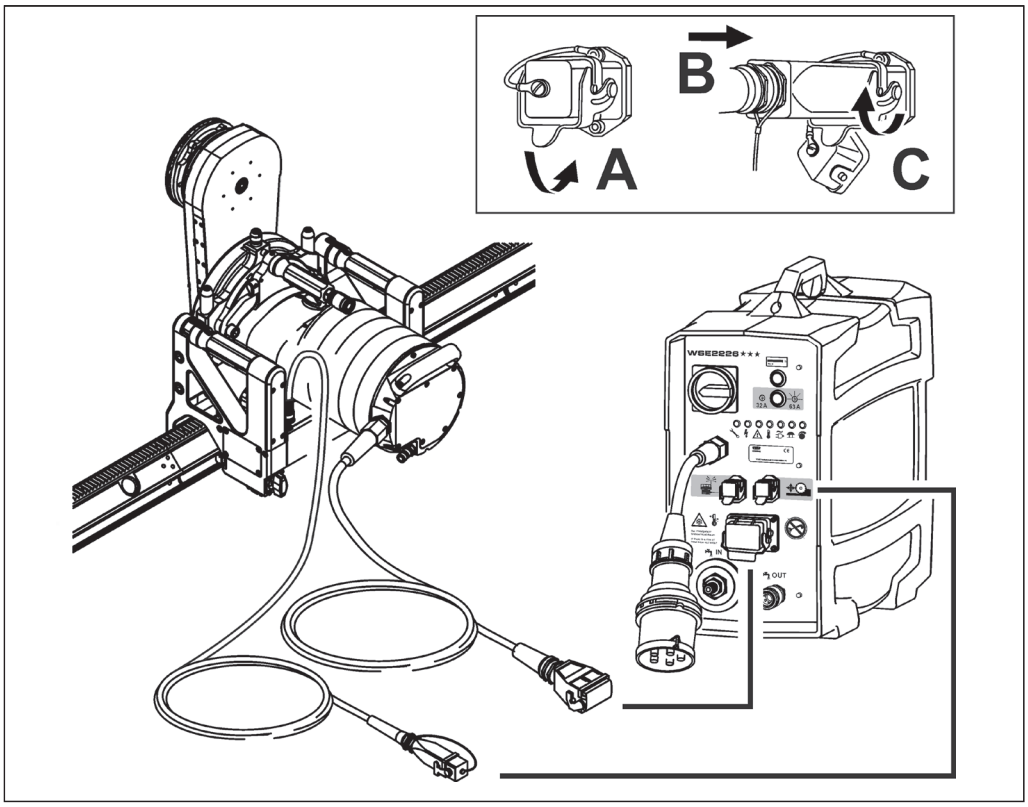
During cable operation no interchangeable rechargeable battery or battery holder must be inserted into the remote controller.

3 Connections

3.1 Connecting remote controller and motor connections

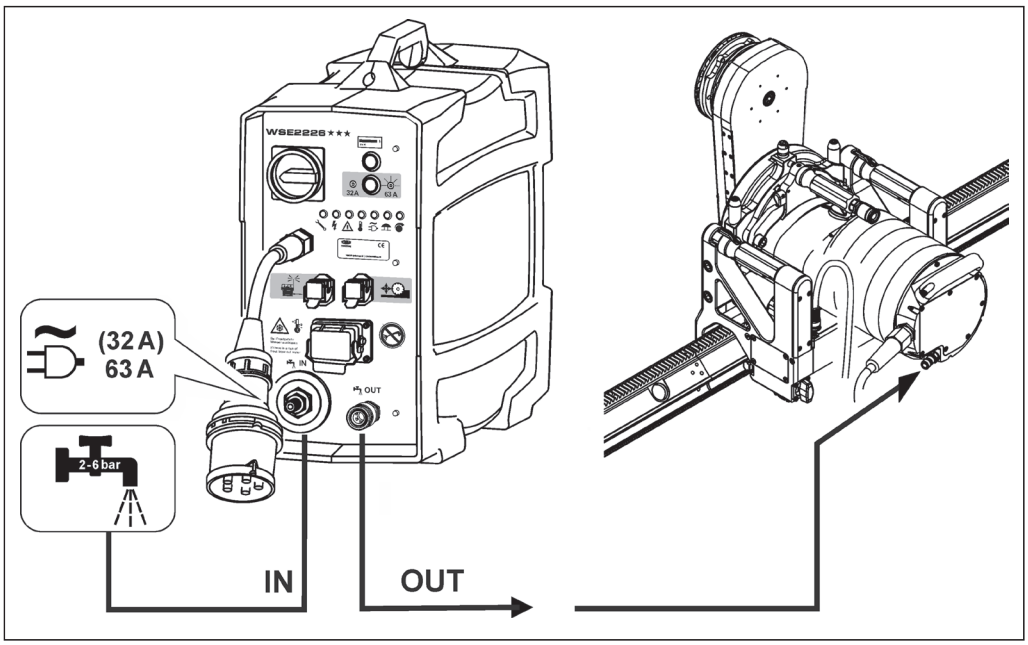
- ✓ The control unit is isolated from the power supply
- ✓ Connectors/plugs are clean
- ✓ Cables are undamaged

▶



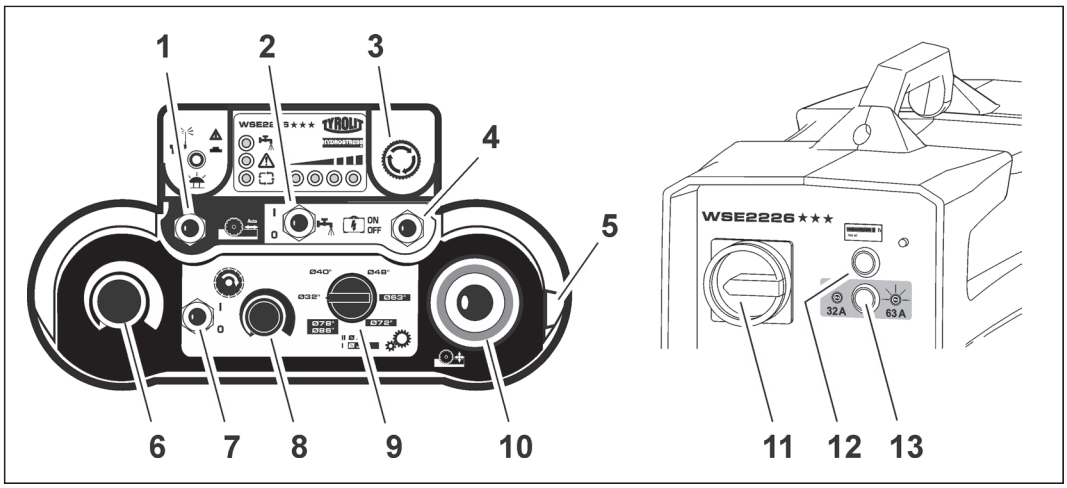
3.2 Connecting the mains and water supply

- ✓ The power supply is earthed and fitted with a residual current operated protective device (FI Type B max. residual current 30mA)
- ✓ Cable cross-section is sufficient: for up to 27 yards long 5 x AWG 9, more than 27 yards long 5 x AWG7



4 Operation

4.1 Overview of operating elements



Controls

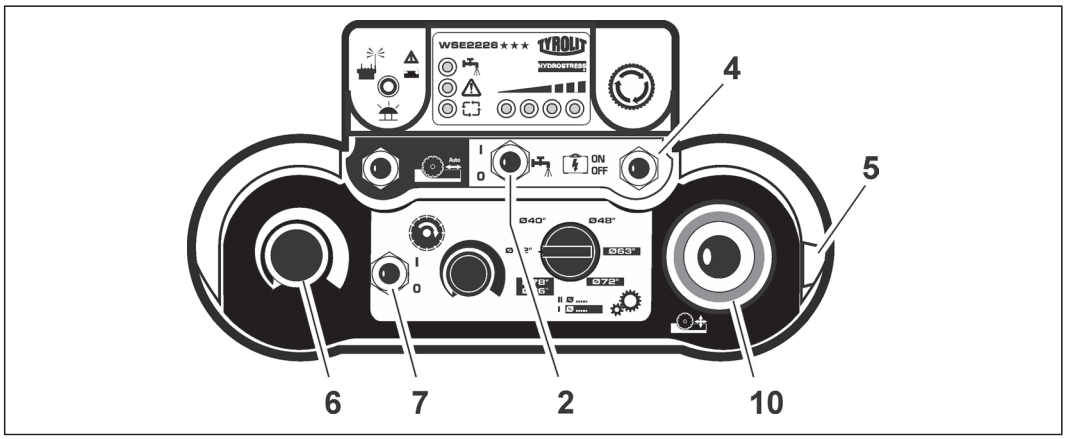
1 Position lock switch (Traverse feed)
2 Water On / Off
3 EMERGENCY STOP
4 Pulse switch control unit
5 Starter switch
6 Feed potentiometer
7 On / Off, main motor
8 Main motor potentiometer
9 Diameter selector switch
10 Feed joystick
11 Main switch Control unit
12 Reset button
13 Mains system selection button

4.2 Starting the control unit WSE2226★★★

CAUTION
The control unit WSE2226★★★ can be damaged if it slips or overturns!

▶ Make sure that the control unit WSE2226★★★ stands horizontally (handle at top).

✓ Control unit WSE2226★★★ is connected to the mains and the water supply.
✓ The sawing machine is connected to the control unit WSE2226★★★.
✓ The remote controller EMERGENCY STOP has been deactivated.
✓ The control unit WSE2226★★★ is not exposed to direct sunlight.



Starting the control unit WSE2226★★★

▶ Move the controls shown below on the remote controller to the 0 position.

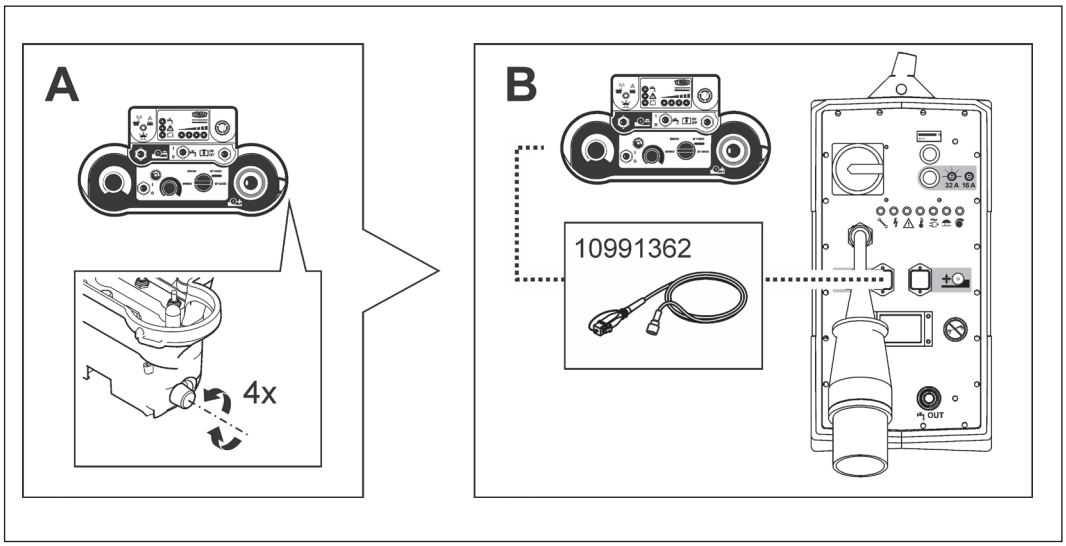
Feed potentiometer (6)
Starter switch (5)
Feed joy stick (10)
Main motor On/Off (7)

▶ Switch on the control unit WSE2226★★★ using the main switch (11).
▶ Switch on the radio remote controller using the starter switch (5).

– Warning lights (radio and battery) at first show red
– An audible signal sounds simultaneously
– Indicators flash coloured
– Second audible signal sounds
– Indicators show coloured
– Warning light flashes green

▶ Press the pulse switch (4) on the radio remote controller briefly to the ON-position.
All indicator lights except the warning light and the group alarm on the radio remote controller go off.
▶ Press the reset button (12) on the control unit.
▶ Press the remote control pulse switch (4) briefly in the ON-position.
The the control unit 'ready' lights show green.
▶ Open the water valve on the system supply line.
▶ Press the Water On/Off switch (2) on the remote control unit to I.
– Water flows from the cutting tool
▶ Press the main motor On/Off switch (7) on the remote controller to position I.
– The electric motor starts when the main motor potentiometer is in the max. position.
▶ The control unit WSE2226★★★ has started up and is ready for operation.

4.2.1 Remote control frequency change



Remote control frequency change

The remote control systems are equipped with a frequency generator for frequency selection. If the systems malfunction or the radio link is interrupted (another transmitter, range, empty battery), the systems immediately go into EMERGENCY OFF mode.

New frequency search:
You can select the next frequency by switching the start switch on the remote control off and back on.
The off/on switching procedure is limited to four attempts (channels). If the system has not found a suitable frequency after four attempts, you must change to cable operation.

4.3 Selecting mains network

The control unit WSE2226★★★ is preset for a 63A power supply network (63A button lights up). It is possible to switch over to a 32A power supply network. The system automatically returns to the 63A settings when it is restarted.

▶ To set the power supply network to 32A press the power network selector (13), the button light goes out.
Resetting must take place directly after switching on the control unit WSE2226★★★.

4.4 Tool soft start

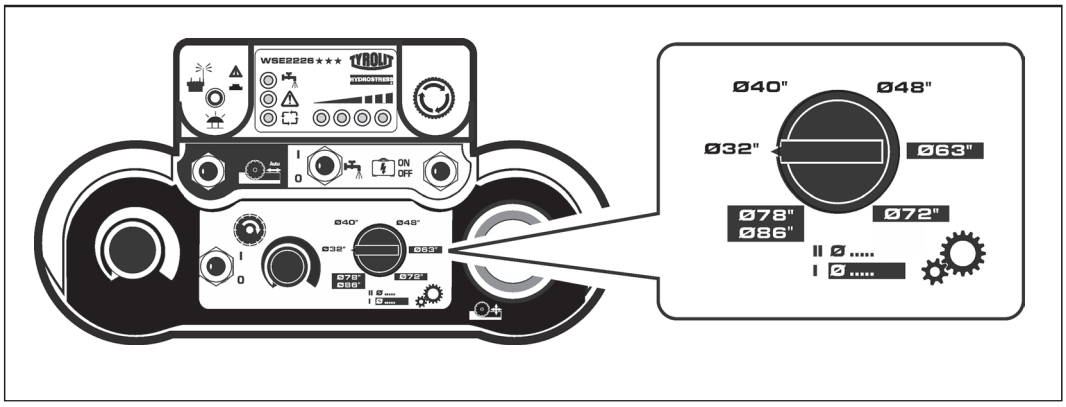
The control unit WSE2226★★★ provides a facility for a tool soft start.

Proceed as follows:

▶ Starting the control unit WSE2226★★★, see 4.2.
▶ Turn the main motor (8) potentiometer to the 0 position.
▶ Press the switch main motor (7) to I.
▶ Select the desired output level, see 4.5.
▶ Turn the main motor (8) potentiometer slowly to 100% power.

4.5 Selecting tool station

After the control unit WSE2226★★★ has been started correctly the tool station can be selected.



Selecting the power level

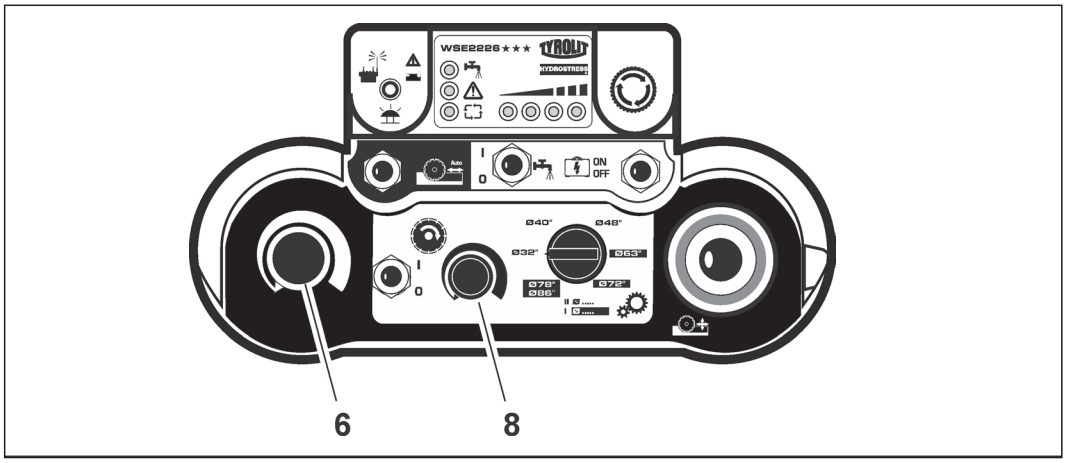
Proceed as follows:

▶ Set the diameter selector switch to the desired tool and turn the main motor potentiometer from 0 to 100%.
▶ Check gear at gearbox of drive motor.

The tool stations may not be changed during operation.
The tool stations are set with reference to the tool diameter for the optimum rotational speed and cutting performance.
The rotational speed can be reduced using the main motor potentiometer but at the same time the power is reduced.

4.6 Power control

The main motor and the feed motor power are controlled via the potentiometers.

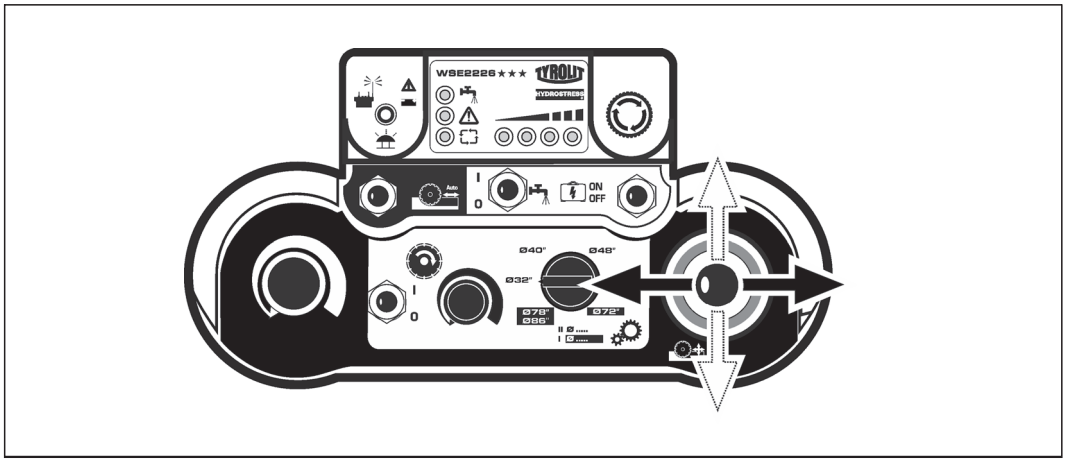


Power control

Feed motor potentiometer (6)
Main motor potentiometer (8)

4.7 Adjusting the feed

The feed movements are selected with the joystick.



Adjusting the feed

During the cutting process the feed speed is automatically assisted by a feed facility.

4.7.1 Manually adjusting the feed speed

✓ Control unit WSE2226★★★ has started

▶ Select the required feed speed via the feed potentiometer (6).

4.7.2 Feed stop

So that the joystick does not have to be held in position during the travel feed motion the travel feed can be locked.

Proceed as follows:

▶ Push the joystick in the desired travel direction and at the same time press the locking switch (1).
▶ When the joystick and the locking switch are released the feed is locked.

In order to release the feed lock, move the joystick slightly in any desired direction.

4.8 Switching off the control unit WSE2226★★★

Proceed as follows:

▶ Switch off electric motor (7) On / Off main motor.
▶ Turn off cooling water, switch (2) Water On / Off.
▶ Close water valve on control unit WSE2226★★★.
▶ Turn the start switch (5) on the remote controller to the 0 position.
▶ Switch off the control unit WSE2226★★★ using the main switch (11).

Only stop the wall saw WSE2226★★★ using the EMERGENCY STOP function in an emergency.

CAUTION

Frost damage to control unit WSE2226★★★!
Heat damage to control unit WSE2226★★★!

▶ Blow out any water if there is a risk of frost (see chapter 4.9, Blowing out water).
▶ Direct sunlight on the WSE2226★★★ control unit must be avoided.

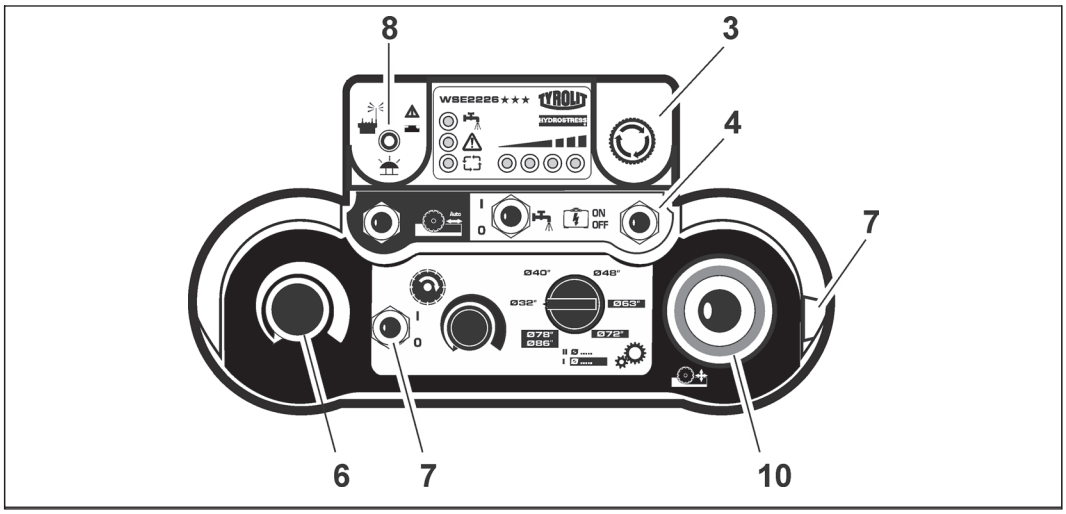
4.9 Blowing out the water

✓ Main switch is set to **OFF**

▶ Disconnect the mains plug.
▶ Disconnect all water lines.
▶ Connect blow out pump to the water nipple.
▶ Blow out water until all of the cooling water has been removed.
▶ Remove the pump.

4.10 Deactivating EMERGENCY STOP

If the EMERGENCY STOP is activated on the radio remote controller, the radio and battery light (8) flashes.



Deactivating EMERGENCY STOP

The following controls must be moved the 0 position:

Feed potentiometer (6).
Feed joy stick (10).
Main motor On/Off (7).
Turn the EMERGENCY STOP button (3) clockwise.
Press pulse switch control unit (4) to the ON position.

4.11 After termination of work

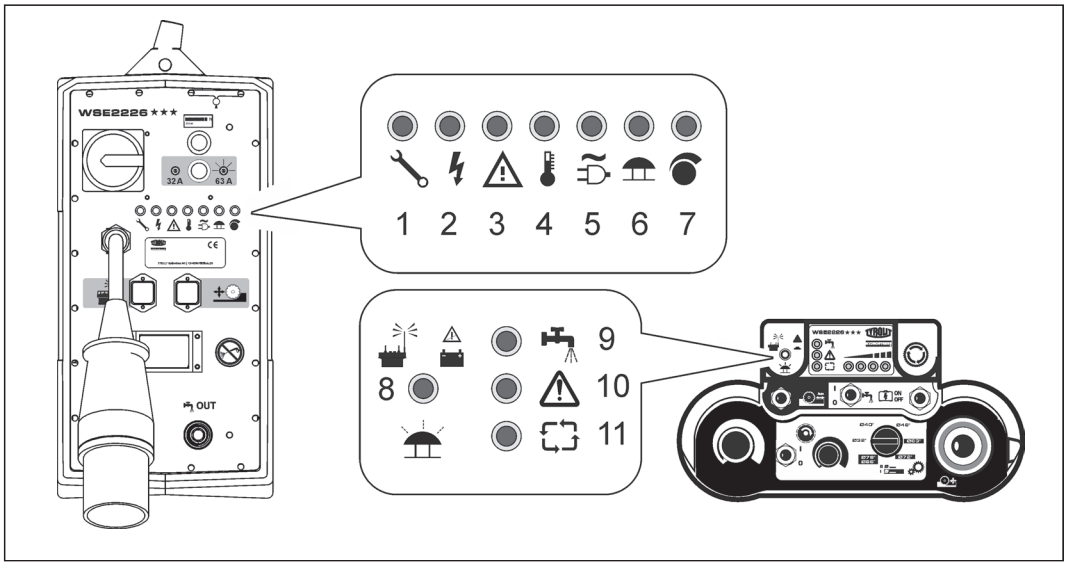
Proceed as follows:

- ▶ Turn the main switch on the control unit WSE2226★★★ to the 0-position.
- ▶ Withdraw the mains plug (Control unit WSE2226★★★).
- ▶ Disconnect the water hoses from control unit WSE2226★★★.
- ▶ Blow out the water from all the lines (blow out pump).
- ▶ Disconnect electric cable.
- ▶ Clean the control unit WSE2226★★★, the remote controller and the cable with a damp cloth.

Cleaning using high pressure cleaning equipment is not permitted.

Products containing cleaning agent can damage parts of the control unit WSE2226★★★, the radio remote controller and the cable.

5 Reacting to displays



Symbols on the control unit / remote controller

Symbols on the control unit

1 Service
2 Control unit external fault
3 Fault within the control unit
4 Temperature
5 Mains connector
6 EMERGENCY STOP
7 Potentiometers

Symbols on the remote controller

8 Radio and battery remote control
9 Cooling water
10 Group alarm
11 Ready for operation lights

Power and error displays on the control unit			
Symbol	**Response**	**Possible cause**	**Action**
	Lights up red	After the first 100 operating hours, then after every 200 operating hours.	Carried out only by TYROLIT Hydrostress AG or an authorised representative
	Lights up red	Fault: - current overload - short circuit - earth fault Main motor - defective feed motor	The control unit will not start. ▶ Check network connection. ▶ Check cable. ▶ Replace feed motors. ▶ Contact TYROLIT Hydrostress AG customer service.
	Lights up red	Defective - main contactor - brake resistance - over current Motor - CAN fault - group fault	The control unit will not start. ▶ Contact TYROLIT Hydrostress AG customer service. ▶ Check network connection.
	Lights up red	Over heated - cooling element - control unit - main motor	The control unit will not start. ▶ Check cooling. Wait until it can be restarted. Before starting press the reset button. ▶ Avoid direct contact with sun light.
	Lights up red	Phase missing	The drive unit will not start or switches off during operation.
			▶ Check the mains fuse in the distribution box and switch it on if necessary.
			▶ Have the site power supply checked.
			▶ Have the extension cables, plugs and sockets checked for faults.
	Lights up red	The EMERGENCY STOP has been activated - CAN fault	▶ Deactivate the EMERGENCY STOP. ▶ Contact TYROLIT Hydrostress AG customer service.
	Lights up red	Feed potentiometer not in zero position	The control unit will not start. ▶ Set the feed potentiometer to **0**.

Power and error displays on the remote controller			
Symbol	**Response**	**Possible cause**	**Action**
	Flashes red	Rechargeable battery voltage too low	▶ Recharge rechargeable battery.
	Flashes rapidly green	No radio connection The EMERGENCY STOP has been activated	▶ Switch on the control unit. ▶ Defective receiver. ▶ No receiver matched connection, see page 5.
	No light shows	No water flow	The control unit will not start, motor does not run. ▶ Press the cooling water button. (LED shows blue).
	Lights up red or flashes	• Group alarm on the control unit • When the pulse switch control unit is operated, the main motor On/Off switch is in the position On	▶ Observe control unit fault indicators. ▶ Press the control unit reset button.
	Lights up green	The motor is ready to start	
	No light shows	Contactor not ready	▶ Operate control unit pulse switch.
		Shows the current power range Ideally: At the third, orange coloured diode (In iron fourth, red diode).	

6 Servicing and maintenance

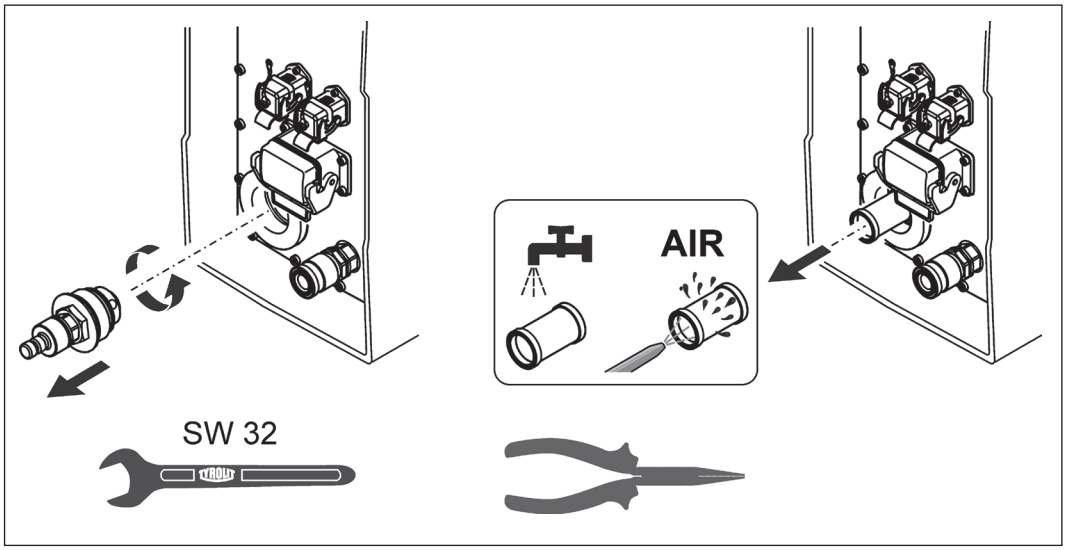
Maintenance and servicing table							
		Before starting up	On finishing work	Weekly	Annually	After faults	After damage
Electrical system	▶ Check the condition and cleanliness of electric cables, plugs/connectors and switches.	X	X			X	X
	▶ Check the condition and cleanliness of connections.	X	X			X	X
Water economy	▶ Check water lines for cleanliness and leaks.	X	X			X	X
	▶ Clean water filters.			X		X	X
	▶ Blow out the water if there is a risk of frost.		X			X	X
Entire WSE2226 control unit★★★	▶ Clean with damp cloth no high pressure cleaner		X				
Service	▶ To be performed by TYROLIT Hydrostress AG or an authorised workshop.	First service after 100 operating hours Further services after every further 200 operating hours					

Cleaning using high pressure cleaning equipment is not permitted.

Cleaning using high pressure cleaning equipment can damage the control unit and the remote controller.

Products containing cleaning agent can damage parts of the control unit WSE2226★★★, the radio remote controller and the cable.

6.1 Clean water filter



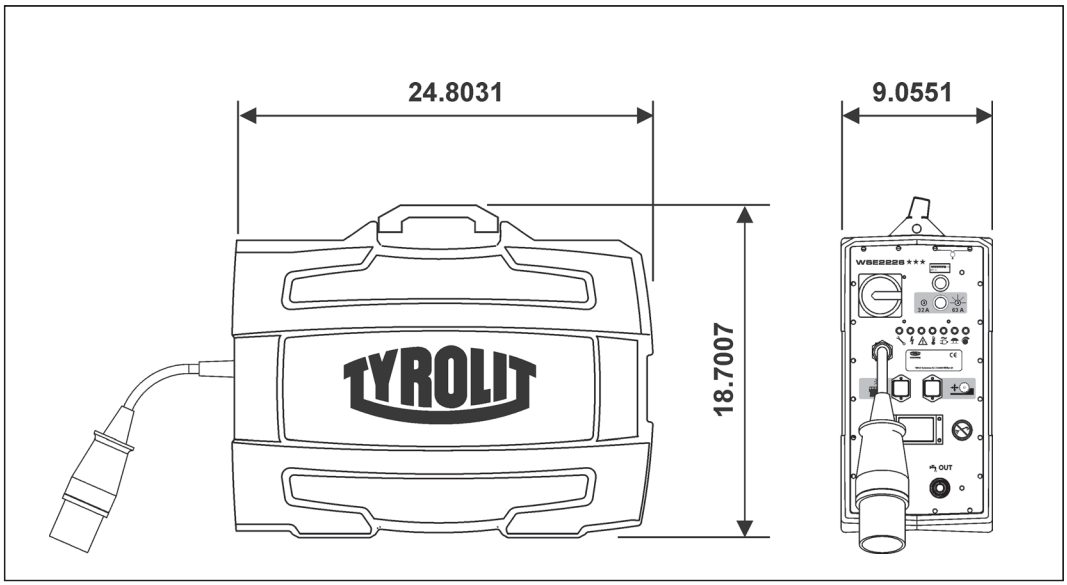
Clean water filter

7 Faults

Faults		
Faults	**Possible cause**	**Solution**
Control unit does not run although the mains cable is connected	Control unit is switched off	▶ Switch control unit on, see Chapter 4.
	Mains cable is defective	▶ Replace the mains cable.
	No voltage at the power supply (building site)	▶ Check the power supply.
	Power supply phases incorrectly connected	▶ Check the power supply.
	Phase missing	See the chapter 5 entitled «Reacting to displays».
The control unit starts and then cuts out again	Building site power supply cut-off unit trips	▶ Check and if necessary adapt the cut-off protection. ▶ If necessary change the power supply. ▶ See chapter entitled «Reacting to displays».
No power, even though the control unit is running	Incorrect voltage Defective main motor	▶ Make sure that the control unit voltage and frequency match the mains supply specifications. ▶ Contact TYROLIT Hydrostress AG customer service.
The control unit suddenly cuts out	Over or under voltage	▶ Check the power supply. Refer to fault indicator.
	Cross section of power supply cable too small	▶ Check the power supply.
	Defective plug connection	▶ Check the plug connection. ▶ Check the power supply.
	Group alarm	▶ Refer to fault indicator
Main motor is not running	• Main motor potentiometer is in 0-position • Defective main motor On / Off switch on remote controller The remote controller 'ready to operate' light does not come on.	▶ Contact TYROLIT Hydrostress AG customer service. ▶ Do not start control unit, see Chapter 4.2
	EMERGENCY STOP activated	▶ Deactivate EMERGENCY STOP, see Chapter 4.10.
	Overheating	▶ Check the water circuit and the plug-in couplings. ▶ Refer to fault indicator.
	No water	▶ Switch on the water supply. ▶ Refer to fault indicator.
Remote controller not working	Rechargeable battery or battery have too little charge	▶ Replace rechargeable battery and recharge or install cable operation. ▶ Replace batteries.
Feed potentiometer indicates no function	• Defective potentiometer in the remote controller • Feed motors not connected • Defective feed motor • Joystick is in the zero position	▶ Contact TYROLIT Hydrostress AG customer service. ▶ See Chapter 3.1 / 4.6 / 4.7
Feed motor fails to build up power	Remote controller potentiometer is defective or in the 0-position	▶ Contact TYROLIT Hydrostress AG customer service. ▶ See Chapter 4.7.1
	Defective cable	▶ Contact TYROLIT Hydrostress AG customer service.
	Motor fault	▶ Contact TYROLIT Hydrostress AG customer service.

Faults		
Faults	**Possible cause**	**Solution**
No water emerging	Water line blocked	▶ Clean the water line.
	Water valve on the supply or water hose are closed	▶ Open the water valve.
	Insufficient water pressure	▶ Make sure that the water pressure is at least 2 bar.
	Water filter is blocked	▶ Remove filter and clean ▶ Contact TYROLIT Hydrostress AG customer service.
	Switch for the radio remote controller defective	▶ Contact TYROLIT Hydrostress AG customer service.
Uncontrolled water leak	• Water valve on the control unit is defective • Switch for the radio remote controller defective	▶ Stop water leaks using the hose water valve. ▶ Contact TYROLIT Hydrostress AG customer service.
Group alarm on the remote controller		▶ See chapter entitled «Reacting to displays».

8 Technical data



Dimensions in inch

Technical data		
Parameter		**Value**
Type	Frequency converter	
Weight	Control unit WSE2226★★★ incl. remote controller	57.3 lbs
	Remote controller separate	4.4 lbs
Protection class	IP 65 (4.4X NEMA rating)	
Connection values	380 to 420 VAC / 50 Hz / 60 Hz	
Max. current consumption	38 A	
Power	With 32 A power supply network	17 kW
	With 63 A power supply network	26 kW
Internal control voltages	Controller / remote controller	24 VDC / 3.6 VDC
	Feed drives	48 VDC
	Main drive unit	400 VAC, 0...400 Hz
Water	Cooling the control unit	Water cooling the power semiconductors
	Cooling water flow rate	min. 1.05 gmp at max 77 °F
	Water connection	min. 29psi / max. 87psi
Usage temperature	Control unit WSE2226★★★ incl. remote controller	+14°F to +104°F

9 Spare parts